

What is claimed is:

1. A low cost oil, grease and solid removal assembly comprising:
    - a container with sectional covers for receiving and holding effluent water
  - 5 containing oil, grease and solid waste to be removed from said effluent water;
    - at least one rotatable disk supported by one of the sectional covers in a partially immersed position within the body of effluent water and in contact with the oil and grease;
    - a drive mounted on one of said sectional covers in driving engagement to provide rotation of said disk when said drive is engaged;
  - 10 a trough mounted on one of said sectional covers in engaging relation to opposite sides of said rotatable disk; and
    - a scraper blade mounted on said trough so that the scraper blade extends from said trough into sliding engagement with a side of said disk, said disk, scraper blade and trough cooperatively disposed and structured to direct oil and grease from said disk along said
  - 15 scraper blade along said trough for collection in a storage container.
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2. The apparatus according to claim 1 wherein said container is constructed from rotomolded plastic.
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- 20 3. The apparatus according to claim 2 wherein said rotomolded plastic container further includes a molded inlet and outlet pipe on opposing ends of said container.
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4. The apparatus according to claim 2 wherein said rotomolded plastic container further includes a thin stainless steel wrap to provide strength to the container assembly.
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- 25 5. The apparatus according to claim 4 wherein said stainless steel wrap is constructed of two stainless steel pieces, each covering one end and one side of said container.
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6. The apparatus according to claim 5 wherein said pieces of stainless steel wrap are joined at opposing corners.
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- 30 7. The apparatus according to claim 6 wherein pieces of stainless steel wrap are joined by welding, screws, rivets, or some other mechanical means.

8. The apparatus according to claim 1 wherein said sectional covers are constructed of stainless steel and are hinged together.

9. The apparatus according to claim 1 wherein said sectional covers further include a  
5 center section.

10. The apparatus according to claim 1 wherein said rotatable disk has an oleophilic outer surface.

10 11. The apparatus according to claim 10 wherein said disk has spaced indentations on an outer circumferential edge of said disk.

12. The apparatus according to claim 1 wherein said drive includes a gear motor drive.

15 13. The apparatus according to claim 1 wherein said drive includes a drive sprocket.

14. The apparatus according to claim 12 wherein said drive is attached to the center section cover.

20 15. The apparatus according to claim 13 wherein said disk is rotated in one direction by the rotation of the drive sprocket in an opposite direction.

25 16. The apparatus according to claim 13 wherein said drive sprocket is rotated when said gear motor drive is engaged.

17. The apparatus according to claim 1 wherein said trough is constructed of stainless steel.

30 18. The apparatus according to claim 1 wherein there are two wiper blades constructed of a flexible material.

19. The apparatus according to claim 9 wherein said center sectional cover supports a heating element.

20. The apparatus according to claim 19 wherein said heating element is a 300 watt heater with a quick reaction thermostat.

5           21. The apparatus according to claim 1 wherein said low cost oil, grease and solid removal assembly further includes an oil and grease storage tank.

10          22. The apparatus according to claim 21 wherein said storage tank is constructed of plastic.

23. The apparatus according to claim 1 further comprising a cover for the drive.

15          24. The apparatus according to claim 1 further comprising a cover for the trough.

25          25. The apparatus according to claim 1 wherein said container further includes an outlet baffle.

20          26. The apparatus according to claim 25 wherein said outlet baffle is constructed of rotomolded plastic.

27. The apparatus according to claim 25 wherein said outlet baffle is downstream of the disk.

25          28. The apparatus according to claim 25 wherein said outlet baffle permits water to flow from the bottom of the container to the outlet pipe.

30          29. The apparatus according to claim 28 wherein said flow to the outlet pipe is water, with oil, grease and solid waste materials removed.

30          30. The apparatus according to claim 25 wherein the sectional covers include an outlet baffle section cover.

31. The apparatus according to claim 30 wherein the outlet baffle sectional cover is constructed of stainless steel and connected by a hinge to the center sectional cover.

32. The apparatus according to claim 1 further including a timer for timed operation  
5 of the drive.

33. A cover unit for a cost oil, grease and solid removal assembly comprising:  
three sectional covers hinged together, including an center section and outer  
sections,

10 the center section having

at least one rotatable disk for partial immersion within the body of  
effluent water in a container on which the cover may be put;

a drive in driving engagement to provide rotation of the disk when the  
drive is engaged;

15 a trough straddling the disk; and

at least one scraper blade mounted on the trough so that the scraper  
blade extends from the trough into sliding engagement with a side of the disk, the  
disk, scraper blade and trough cooperatively disposed and structured to direct oil  
and grease from the disk along said the scraper blade along the trough into a  
storage container.

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34. A cover unit for a cost oil, grease and solid removal assembly as claimed in claim  
33 wherein the center sectional cover supports a heating element and a timer for timed  
operation of the drive.

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35. A low cost oil, grease and solid removal assembly according to claim 1 further  
comprising a basket support in the container for holding a basket to trap solid waste material.

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36. The apparatus according to claim 35 wherein said basket support is constructed of  
rotomolded plastic.

37. The apparatus according to claim 35 wherein said basket support is adapted to  
hold a strainer basket.

38. The apparatus according to claim 35 wherein said basket support has walls with cutouts in the walls of said basket support.

39. The apparatus according to claim 39 wherein said basket support cutouts permit  
5 the effluent water with oil and grease to flow downstream of said basket support.

40. The apparatus according to claim 35 wherein said sectional covers include a cover for the basket support.

10 41. The apparatus according to claim 41 wherein said basket support cover is constructed of stainless steel.

15 42. The apparatus according to claim 41 wherein said basket support cover can be opened to permit withdrawal of the strainer basket for removal of solid waste materials contained within said strainer basket.

43. A method of removal of grease, oil and solid waste material from effluent water comprising:

20 installing a low cost oil, grease and solid waste removal assembly at facility site; connecting an inlet pipe of the low cost oil, grease and solid waste removal assembly to a source discharging effluent water with waste materials to be removed; connecting an outlet pipe of the low cost oil, grease assembly to a sewage system;

25 installing a strainer basket in a strainer basket support in the assembly; installing an oil and grease storage container to receive oil and grease flow from a trough in the assembly;

engaging a drive motor of the assembly to rotate a disk in the assembly to remove oil and grease from effluent water;

30 monitoring the strainer basket to remove solid waste when strainer basket is full; and

monitoring oil and grease levels in the storage container to empty the container when the storage container is approaching fullness.

45. A low cost oil, grease removal assembly comprising:

a rotomolded plastic container having an inlet and an outlet;  
a rotomolded plastic basket support located at the inlet inside the container;  
a rotomolded plastic outlet baffle located in the container at the outlet;  
a plurality of container cover sections including a first section to cover the  
5 basket support;  
a second container cover section having an oil, grease removal mechanism  
downstream of the basket support and upstream of the outlet baffle; and  
a third container cover section to cover the outlet baffle.

- 10        45. A method of making an oil, grease removal assembly comprising:  
            rotomolding a container having inlet and outlet ends, a strainer basket support, an  
            outlet baffle and sectional covers for the container,  
            welding the strainer basket support within the inlet end of the container,  
            welding the outlet baffle within the outlet end of the container,  
15        installing an oil, grease removal assembly to one of the sectional covers, and  
            mounting the sectional covers on the container.

46. A method as claimed in claim 45 further comprising wrapping the container in  
stainless steel.

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